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Original Study

Elevated Hospitalization Risk of Assisted Living Residents With Dementia in Alberta, Canada

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ABSTRACT

Objectives: Assisted living (AL) is an increasingly used residential option for older adults with dementia; however, lower staffing rates and service availability raise concerns that such residents may be at increased risk for adverse outcomes. Our objectives were to determine the incidence of hospitalization over 1 year for dementia residents of designated AL (DAL) facilities, compared with long-term care (LTC) facilities, and identify resident- and facility-level predictors of hospitalization among DAL residents.
Methods: Participants were 609 DAL (mean age 85.7 ± 6.6 years) and 691 LTC (86.4 ± 6.9 years) residents with dementia enrolled in the Alberta Continuing Care Epidemiological Studies. Research nurses completed a standardized comprehensive assessment of residents and interviewed family caregivers at baseline (2006–2008) and 1 year later. Standardized administrator interviews provided facility level data. Hospitalization was determined via linkage with the provincial Inpatient Discharge Abstract Database. Multivariable Cox proportional hazards models were used to identify predictors of hospitalization.
Results: The cumulative annual incidence of hospitalization was 38.6% (34.5%–42.7%) for DAL and 10.3% (8.0%–12.6%) for LTC residents with dementia. A significantly increased risk for hospitalization was observed for DAL residents aged 90+ years, with poor social relationships, less severe cognitive impairment, greater health instability, fatigue, high medication use (11+ medications), and 2+ hospitalizations in the preceding year. Residents from DAL facilities with a smaller number of spaces, no chain affiliation, and from specific health regions showed a higher risk of hospitalization.
Conclusions: DAL residents with dementia had a hospitalization rate almost 4-fold higher than LTC residents with dementia. Our findings raise questions about the ability of some AL facilities to adequately address the needs of cognitively impaired residents and highlight potential clinical, social, and policy areas for targeted interventions to reduce hospitalization risk.
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The increasing number of older adults with dementing disorders[1–4] presents significant challenges to providers and policy makers striving to ensure cost-effective, high quality care for aging populations. Similar to trends observed in the US,[5–11] older adults with dementia, often with significant comorbidity, are increasingly being cared for in assisted living (AL) settings within Canada.[12,13] Current estimates suggest that between 40% and 60% of AL residents across North America have a diagnosis of dementia.[5,9,12] The rapid expansion of AL over recent years reflects both the lower costs of this residential option compared with long-term (ie, nursing home) care (LTC) as well as individual preferences for more home-like settings.[14,15] Yet, the AL sector remains poorly defined and understood.[12,16] In particular, uncertainty persists regarding how best to structure and implement integrated care to support personal preferences while limiting costly and potentially inappropriate transitions in care.[17–19]

AL facilities aim to provide secure housing, personal support and limited health care while promoting choice, autonomy, privacy, and independence.[5,20] Although the specific role of AL varies considerably across regions, in many instances it is viewed as a substitute for long-term care.[12,15] Yet, the care philosophy and approach adopted by the AL sector (emphasizing a social care model with support services provided in a home-like residential setting) differ substantially from the traditional LTC setting.[12,15] Although it is acknowledged that the AL philosophy may promote functional independence and satisfaction among residents, many clinical and quality of care issues remain unanswered.[5,17] The lower staffing levels with predominantly nonprofessional care providers and limited availability of ancillary services within AL (relative to LTC) has raised concerns that more vulnerable residents may be at an increased risk for poor quality of care and adverse health outcomes.[9,17,21–23] Delayed detection of emerging health issues, suboptimal medication management, and limited ability to augment care in the AL setting could ultimately result in higher use of hospital care and costs.[16,23–27] These concerns are heightened for older residents with dementia who often exhibit considerable comorbidity, atypical disease presentation, and difficulties in communicating their symptoms and needs.[18,19,28]

Relative to LTC,[29–36] empirical data on the health and social needs and outcomes of older residents with dementia in AL remain scarce.[7–9,37] It is unclear whether observed differences in resident, facility, and system characteristics contribute to elevated risks for potentially adverse outcomes.[9,38–40] In the US Collaborative Studies for Long-Term Care,[9] adjusted analyses revealed a significantly higher 1-year hospitalization rate for residents with dementia in AL compared with LTC. Interestingly, no other outcome differences were observed across these 2 settings.[8,9,17] These findings illustrate the challenges faced by AL facilities in caring for cognitively vulnerable residents with substantial and often unstable medical and nursing needs.[9,21,26,37]

Hospitalization is an important outcome not only as a potential quality of care indicator for the AL sector but also in light of the health risks posed for older persons with dementia who experience an acute care admission. Community- and claims-based studies have consistently shown that relative to matched controls, those with dementia are significantly more likely to be hospitalized (often for potentially preventable reasons),[18,28,41] to have longer lengths of stay,[42,43] and higher health care costs.[41,44] These vulnerable patients are also at greater risk for experiencing poorer health and functional outcomes during and posthospitalization.[28,45–47] Given the increasing use of AL facilities and the relative absence of data on the extent and risk factors for hospitalization among older AL residents with dementia, further large-scale investigations are needed for more informed clinical and policy decisions.[17]

We sought to estimate the incidence of hospitalization among designated (publicly funded) assisted living (DAL) residents with dementia in Alberta over 1 year, to compare this rate to that observed among LTC residents with dementia from the same catchment areas and time period, and to identify DAL resident and facility characteristics associated with an increased risk for hospitalization.

Methods

Study Design

Data were derived from the Alberta Continuing Care Epidemiological Studies (ACCES), a longitudinal investigation of AL and LTC residents in the Province of Alberta, Canada.[20,48] The AL cohort included older residents of designated (publicly funded) AL and supportive housing facilities (DAL) in 5 health regions (2 major urban and 3 largely rural regions). At the time of the study, these regions accounted for over 80% of provincial continuing care beds. The DAL settings included in ACCES fell under the supportive living stream adopted by the province at this time and, thus, encompassed a philosophy and approach for providing support services within a secure housing and "home-like" environment. Although the settings shared similar features (including a focus on promoting resident independence, autonomy, privacy, and aging in place), there were some differences across the health regions in target populations, and in the type and availability of care staff and services.[12,20] Further details regarding the residents and facilities included in ACCES have been published elsewhere.[12,20,48]

To be eligible for inclusion, DAL facilities had to be in operation for 6+ months; not primarily serving residents with mental illness (other than dementia) or developmental disabilities; and, housing a minimum number of DAL residents 65+ years old (≥4 for small and ≥10 for large facilities). Fifty-nine of the 60 DAL facilities meeting these criteria agreed to participate. Residents in participating DAL sites were excluded if they were aged less than 65 years, recently admitted (<21 days), receiving palliative care (expected survival <6 months), and/or their participation was otherwise deemed inappropriate by staff or family. A total of 1089 participants of the 1510 eligible residents (72.1% response rate) were enrolled and assessed [339 (22.5%) refused and for 82 (5.4%) their legally designated surrogate could not be contacted]. Age and sex were available for 364/421 (86.5%) of the nonparticipants and showed a similar distribution (mean age 84.4 ± 7.1, 74% women) to those enrolled. Of the 1066 residents with outcome measures (excluded were 3 residents with unknown outcomes and 20 who refused consent for administrative data linkage), there were 609 (57.1%) with a recorded diagnosis of dementia.

A random sample of small and large LTC facilities (based on median bed number) was selected in each region employing the same facility eligibility criteria. Within Alberta, LTC facilities provide support and 24-hour registered nursing care (including on an unscheduled basis) for persons with complex and chronic health needs. At the time of the study, these facilities did not provide short-stay or post-acute care or intravenous therapy. As such, residents are comparable to the long-stay nursing home population in the United States. Fifty-four of the 59 facilities approached agreed to participate. A random sample of 1731 eligible residents (same resident criteria) in the participating facilities was approached, and 1000 were enrolled and assessed (57.8% response rate). Age and sex were available for 665/731 (91%) of nonparticipants and showed a similar distribution (mean age 84.7 ± 7.5, 67% women) to participants. Of the 976 LTC participants with outcome measures (3 could not be linked with administrative data and 21 did not consent to data linkage), 691 (70.8%) had a recorded diagnosis of dementia.

Ethics approval was obtained from the University of Calgary Conjoint Health Research Ethics Board, the University of Alberta

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